Docket No.: 434620-144 Serial No. 10/580,630

In the Claims

The following Listing of Claims replaces all prior versions in the application:

LISTING OF CLAIMS

- 1 (Currently amended) A power supply system comprising:
 - a DC power supply apparatus;
 - a load device which is connected to an output side of the DC power supply apparatus;
- a lithium ion battery for backup that is connected in parallel with to the output side of said DC power supply apparatus and in parallel with said load device;
 - a charging path which is connected in series to the lithium ion battery;
- a charging current limiting circuit, which is provided with a charging current control element, that is connected in series with said lithium ion battery and supplies a charging current of an arbitrary value independent of load fluctuations in the charging path of the lithium ion battery;

a switch that is provided with such function that disconnects said lithium ion battery from said DC power supply apparatus or said load device, or connects said lithium ion battery to said DC power supply apparatus or said load device so and that connects said lithium ion battery is always connected to said DC power supply apparatus or said load device in a normal state; and

a control circuit that monitors the voltage value of said charging path, sets performs a reference voltage value setting used for setting the charging current of an arbitrary value in said charging current limiting circuit, and controls said switch when said voltage of said charging path exceeds a specified voltage value during charging.

2. (Original) The power supply system in accordance with claim 1, wherein a plurality of said lithium ion batters are connected in series, and

said power supply system is further provided with a voltage regulation circuit that is connected in parallel with each lithium ion battery of said plurality of series-connected lithium ion batteries, detects a full-charge voltage in each of said lithium ion batteries and bypasses said charging current.

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3. (Currently amended) A power supply system comprising:

- a DC power supply apparatus;
- a load device which is connected to an output side of the DC power supply apparatus;
- a plurality of series-connected lithium ion batteries that are connected in parallel with to the output side of said DC power supply apparatus and in parallel with said load device;

a charging current limiting circuit, which is provided with a charging current control element, that is connected in series with said plurality of lithium ion batteries and that supplies a charging current of an arbitrary value independent of load fluctuations in the charging path of said plurality of lithium ion batteries;

a switch that is provided with such function that disconnects said plurality of lithium ion batteries from said DC power supply apparatus or said load device, or connects said plurality of lithium ion batteries to said DC power supply apparatus or said load device so-and that connects said plurality of lithium ion batteries is always connected to said DC power supply apparatus or said load device in a normal state;

a voltage regulation circuit, which is provided with a bypass current limiting element, that is connected in parallel with each lithium ion battery of said plurality of series-connected lithium ion batteries, detects a full-charge voltage in each lithium ion battery and bypasses said charging current; and

a control circuit that monitors the voltage value and current value of said charging path, sets a reference voltage used for setting the charging current of an arbitrary value in said charging current limiting circuit and sets-performs a full-charge reference voltage setting in said voltage regulation circuit, and switches said switch when said voltage of said charging path exceeds a specified voltage value during charging.